

Published in final edited form as:
Bioethics Forum. 2009 ; 39(3): 1.

Bioethics and Global Climate Change

David B. Resnik, JD, PhD
Bioethicist, NIEHS, NIH

In the past two decades, the scientific community has reached an overwhelming consensus that human activities are causing changes to the global climate. Increased production of carbon dioxide, methane and other greenhouse gases in the last century has raised temperatures around the planet, as evidenced by receding glaciers, melting icecaps, and record-breaking heat waves. If humanity does not start significantly reducing greenhouse gas emissions, average global temperatures will likely increase by several degrees Celsius in the next fifty years, which would lead disastrous environmental consequences, such as flooding of coastal areas, increased numbers of powerful hurricanes, desertification, decreased agricultural productivity, and loss of biodiversity. Although there remain some scientific uncertainties and disagreements about the extent of expected temperature increases, the magnitude of the environmental impacts, and how to mitigate global warming, there is near unanimity that humanity plays a significant role in changing the climate.[1],[2]

To date, most of the moral consciousness-raising concerning climate change has come from environmental scientists, political interest groups, social activists, religious denominations, and some politicians, most notably, former U.S. Vice President Al Gore.[3] Industry representatives, business interests, economists, and politicians, most notably U.S. President George W. Bush, have challenged the scientific consensus concerning climate change and have resisted attempts curb greenhouse emissions. Bioethicists, for the most part, have remained on the sidelines of the debate. This silence is a perilous omission. Because global climate change is likely to have substantial impacts on the environment and human health, bioethicists should take part in the discussion about global warming and contribute their perspectives to these urgent issues.

There are several reasons why bioethicists have had little to say about global warming. First, bioethics has traditionally focused on dilemmas and decisions related to interactions among patients, medical professionals, and health care organizations. Topics such as abortion, euthanasia, informed consent, privacy, reproductive health, and access to health care are the bread and butter of bioethics research, education, and consultation. Concerns about global warming usually do not arise in typical encounters between medical professionals and patients or in the development of institutional policies. Second, most bioethicists work for health care organizations, such as hospitals or medical schools, which do not have a vested interest in environmental issues. Bioethicists are paid to help solve problems related health care, not to expound on environmental concerns. Third, environmental issues do not have the emotional impact of the life and death dramas that take place each day in hospital wards. Hence, they tend to draw less attention from the media, the public, and scholars. Everyone can understand and appreciate the ethical difficulties related to withdrawing life support from a loved one, but not very many people can come to terms with the significance of global warming. Climate change issues are often abstract and difficult to see.

Although bioethicists have not paid much attention to environmental issues, that trend is beginning to change. In recent years, a number of different writers have argued that bioethicists and health policy analysts should consider how the environment affects human health and how the health care system impacts the environment.[4],[5],[6],[7] Environmental factors such as

geography, housing, education, income, race, workplace safety, ethnicity, pesticide exposures, and clean air, water, and soil have a significant impact human health.[4] Some environmental factors, such as the availability of clean water and air, can be as important at promoting the health of population as access to health care.

Additionally, differences in the social and physical environment can contribute to differences in health. People who live near environmental hazards, such as landfills and factories, tend to have worse health the people who do not. The devastation wrought by hurricane Katrina in August 2005 illustrated how the environment can have a disproportionate impact on human health. Socioeconomically disadvantaged people were harmed more by the hurricane than well-off people, because they tended to live in areas that were more susceptible to flooding and they had fewer resources to escape from the flooding or deal with its impacts.[8] According to a recent report on climate change, the burdens caused by global warming will be distributed unequally: people living in developing nations will suffer greater harms than people living in developed nations, due to the effects of flooding, drought, famine, and disease.[9]

Not only is human health greatly affected by the environment, but the provision of health care can have substantial, adverse environmental impacts.[10] Hospitals and clinics generate tons of biomedical waste and other hazardous materials. A typical heart revascularization surgical procedures creates 43 pounds of biomedical waste.[11] These waste products can pollute the soil and water and pose a threat to human health and the environment. Health care institutions also contribute to global warming by using a tremendous amount of electricity for their operations or burning fuels that produce greenhouse gases. Pharmaceuticals and their metabolic products, which are excreted by the body, can enter the ecosystem. Many water sources have trace amounts of codeine, acetaminophen, ibuprofen, digoxin, and antibiotics. The health effects of exposure to trace amounts of these chemical are unknown.[12]

If environmental issues, such as climate change, belong on bioethics' agenda, then what can bioethicists do to help address these issues? First, bioethicists can raise awareness among leaders of health care organizations about how their decisions have an impact on climate change. They can encourage hospitals and medical centers to consider ways of reducing their contribution to global warming, such as improving energy efficiency, promoting telecommuting and telemedicine, and encouraging the use of mass transit. Second, bioethicists participate in debates about climate change issues that arise outside of the health care setting, such as disaster preparedness, land use policy, international law and ethics, and pollution cap and trade systems. Third, bioethicists can explore the moral, philosophical, theological, and legal foundations of environmental policy. Some situations raise fundamental conflicts between promoting human health and protecting the environment. For example, even a choice as simple and mundane as setting a hospital's thermostat creates a potential conflict between human health and the environment, since lowering the setting may reduce the hospital's impact on the environment, but raising it may help promote their health of patients. Bioethicists should help health care administrators to think about decisions like these.

Acknowledgments

This research was supported by the intramural program of the NIEHS/NIH. It does not represent the views of the NIEHS or NIH.

References

1. National Academy of Sciences. Climate Change Science: An Analysis of Some Key Questions. Washington, DC: National Academy Press; 2001.
2. National Academy of Sciences. Understanding Global Climate Change Feedback. Washington, DC: National Academy Press; 2003.

3. Gore, A. *An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do About It*. New York: Rodale Books; 2006.
4. Resnik D, Roman G. Health, justice, and the environment. *Bioethics* 2007;21:230–41. [PubMed: 17845481]
5. Daniels, N.; Kennedy, B.; Kawachi, I.; Cohen, J.; Rogers, J. *Is Inequality Bad for Our Health?*. Boston: Beacon Press; 2000.
6. Robert J, Smith A. Toxic ethics: environmental genomics and the health of populations. *Bioethics* 2004;18:493–514. [PubMed: 15580721]
7. Fiore R, Fleming L. Occupational and environmental health: toward an environmentally inclusive bioethics. *Professional Ethics* 2003;11:63–80.
8. Moreno J. In the wake of Katrina: has bioethics failed? *American Journal of Bioethics* 5 2005;5:W18.
9. Intergovernmental Panel on Climate Change. *Climate Change. Impacts, Adaptation, Vulnerability*. 2007 [Accessed: May 15, 2007]. Available: <http://www.ipcc.ch/SPM13apr07.pdf>
10. Pierce, J.; Jameton, A. *The Ethics of Environmentally Responsible Health Care*. New York: Oxford University Press; 2003.
11. Tieszen M, Gruenberg J. A quantitative, qualitative, and critical assessment of surgical waste. Surgeons venture through the trash can. *Journal of the American Medical Association* 1992;267:2765–8. [PubMed: 1578596]
12. Kolpin D, Furlong E, Meyer M, Thurman E, Zaugg S, Barber L, Buxton H. Pharmaceuticals, hormones, and other organic wastewater contaminants in U.S. streams, 1999–2000: a national reconnaissance. *Environmental Science and Technology* 2002;36:1202–11. [PubMed: 11944670]